

Title (en)

PUMPS AND PUMP HEADS COMPRISING VOLUME-COMPENSATION FEATURE

Title (de)

PUMPEN UND PUMPENKÖPFE MIT VOLUMENAUSGLEICHFUNKTION

Title (fr)

POMPES ET TÊTES DE POMPE PRÉSENTANT UNE FONCTION DE COMPENSATION DE VOLUME

Publication

EP 2588759 B1 20170621 (EN)

Application

EP 11801433 A 20110630

Priority

- US 36083510 P 20100701
- US 2011042653 W 20110630

Abstract (en)

[origin: US2012003107A1] A fluid pump having a pump housing that includes at least one expansion joint, provides volume compensation, as needed, to adjust for changes in pressure in the pump housing. Various embodiments automatically and passively reduce static pressure in the pump housing associated with a freezing event, thereby preventing damage to the pump head. Volume compensation is achieved by employing, in each expansion joint, a dynamic seal that allows relative movement of two portions of the pump housing, and a bias that provides a selected counter-force to the movement of the housing portions. The subject pumps are particularly suited for use in automotive and other rugged applications, in which fluid pumps may experience recurring freezing events.

IPC 8 full level

F01C 21/10 (2006.01); **F04B 11/00** (2006.01); **F04C 2/10** (2006.01); **F04C 14/18** (2006.01); **F04C 14/28** (2006.01); **F04C 15/00** (2006.01);
F04D 13/02 (2006.01); **F04D 29/08** (2006.01); **F04D 29/40** (2006.01)

CPC (source: EP US)

F01C 21/10 (2013.01 - EP US); **F04B 11/0033** (2013.01 - US); **F04C 2/10** (2013.01 - EP US); **F04C 14/28** (2013.01 - EP US);
F04C 15/0049 (2013.01 - EP US); **F04C 14/185** (2013.01 - EP US); **F04C 2270/18** (2013.01 - EP US)

Cited by

WO2018089847A1; US10883497B2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

US 2012003107 A1 20120105; US 8734139 B2 20140527; EP 2588759 A2 20130508; EP 2588759 A4 20160406; EP 2588759 B1 20170621;
WO 2012003357 A2 20120105; WO 2012003357 A3 20120426

DOCDB simple family (application)

US 201113174463 A 20110630; EP 11801433 A 20110630; US 2011042653 W 20110630